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PATENT, TRADEMARK AND COPYRIGHT LAW AND RELATED FEDERAL AND ITC LITIGATION

Docket No.: 4544-011-25 DIV\_

ASSISTANT COMMISSIONER FOR PATENTS WASHINGTON, D.C. 20231

> U.S. Application Serial No. 08/420,503 RE:

> > MICHAEL D. QUINN ET ALDEREK MASON, PH.D. Applicant(s):

Filing Date:

For:

April 12, 1995

THERMODILUTION CATHETER HAVING A SAFE,

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ARTHUR I NEUSTADT

FLEXIBLE HEATING ELEMENT

Group No.

Examiner:

3311 NASSER

SIR:

Attached hereto for filing are the following papers:

AMENDMENT (WITH 3 ATTACHMENTS) CONSOLIDATED PTO-1449 (ATTACHMENT 1)

COPY OF U.S. PATENT NO. 5,464,398 (ATTACHMENT 2)

COPY OF U.S. PATENT NO. 5,450,466 (ATTACHMENT 3)

PETITION FOR ONE MONTH EXTENSION OF TIME

PROPOSED PTO-850

UPDATED 37 CFR 1.607 REQUEST FOR AN

INTERFERENCE WITH TWO PATENTS REQUEST FOR EXPEDITED PROSECUTION

Our check in the amount of \$110.00 is attached covering any required fees. In the event any variance exists between the amount enclosed and the Patent Office charges for filing the above-noted documents, including any fees required under 37 CFR 1.136 for any necessary Extension of Time to make the filing of the attached documents timely, please charge or credit the difference to our Deposit Account No. 15-0030. Further, if these papers are not considered timely filed, then a petition is hereby made under 37 C.F.R. 1.136 for the necessary extension of time. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND MAIER & NEWSTADT

Charles L. Gholz, Esq. Registration No. 26,396

Registration No. 35,299

Attorney of Record Richard A. Neifeld

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SURINDER SACHAR UNDSEY A. DODSON\*
FRANK J. WEST\* SHARON E. CRANE, PH.D.\* BRADLEY D. LYTLE IOHN W. CARPENTER CHRISTINA M. GADIANO KARL D. KOVACH\* MICHAEL H. JACOBS THOMAS M. RIZZO, PH.D.\* JEFFREY B. McINTYRE\*
KATHLEEN COONEY-PORTER\* ANDREW M. OLLIS MARGO LIVESAY, PH.D.\*
FREDERICK D. VASTINE, PH.D.\* PAUL E. RAUCH, PH.D. MICHAEL R. CASEY, PH.D.\*

\* BAR MEMBERSHIP OTHER THAN VIRGINIA REGISTERED PATENT AGENT



ACHMENT 1

## ATTACHMENT 1

SHEET \_\_\_\_\_ OF \_\_\_\_6\_\_\_

Form PTO U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE				ATTY. DOCKET NO.4544-011-25 DIV SERIAL NO. 08/420,503				
LIST	OF REF	ERENCES CITED BY APPLICANT al Sheets if Necessary)		APPLICANT Michael D. Quinn et al.				
				FILING DATE APRIL 12, 1995		GROUP 3311		
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING D IF APPROP	
m	АВ	3,075,515	01/29/63	RICHARDS	128	692		
	AA	3,359,974	12/26/67	KHALIL	128	2.05	10/07/63	
	AE	3,595,079	07/27/71	GRAHN, A.R.				
	AD	3,634,924	01/18/72	BLAKE ET AL.	29	447	04/20/70	
	AG	3,720,199	03/13/73	RISHTON ET AL.	128	1 D	05/14/71	
	AJ	3,746,003	07/17/73	BLAKE ET AL.	128	349B	09/23/71	
	AF	3,790,910	02/05/74	MCCORMACK	235	151.3	04/21/72	
	AI	3,798,967	03/26/74	GEILES ET AL.	73	204	04/13/72	
	AK	3,995,623	12/07/76	BLAKE ET AL.	128	2.06E_	02/11/76	
	AC	4,073,287	02/14/78	BRADLEY ET AL.	128	692		
CY	AH	4,089,336	05/16/78	CAGE ET AL.	128	303.1	12/20/74	
<u> </u>		F(	OREIGN PATE	IT DOCUMENTS				
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~	AL	W091/03208	03/21/91	РСТ				
	АМ	0 221 357	05/13/87	EUROPE				
,	AN	0 235 811	09/09/87	EUROPE				
	AO	0_303_757	02/22/89	EUROPE				
	AP	0 378 234	07/18/90	EUROPE				
Ą		OTHER REFERENCES (Includi	ng Author,	Title, Date, Pertinent Page	es, Etc.)		<b>-a.</b>	
(		A CONTINUOUS CARDIAC OUTPUT CO	MPUTER BASE	O ON THERMODILUTION PRINCIP	LES, R.A.	NORMANN E	T AL, ANNA	LS OF
ne	AR	BIOMEDICAL ENG. VOL. 17, P. 61	-73, 1989.					
		INVESTIGATION OF A CONTINUOUS	HEATING/COO	LING TECHNIQUE FOR CARDIAC	OUTPUT ME	ASUREMENT,	KEVIN C.	EHLERS
	AS	ET AL., ANNALS OF BIOMEDICAL E	NG., VOL. 1	5, P. 551-565, 1987.				
		DETERMINATION OF CARDIAC OUTPU	T IN MAN BY	A NEW METHOD BASED ON THER	MODILUTIO	N, H.H. KI	ALIL ET AL	-,
Rin	AT	PRELIMINARY COMMUNICATIONS, 06/22/63, P. 1352-4.						
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Form PTO 1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE				,503		
		ERENCES CITED BY APPLICANT al Sheets if Necessary)		APPLICANT MICHAEL D. QUINN ET AL.				
				FILING DATE APRIL 12, 1995		GROUP 3311		
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME CLASS SUB FILING DATE CLASS IF APPROPRIA				
R	AA	4,091,813	05/30/78	SHAW ET AL.	128	303.1	03/14/75	
	AK	4,185,632	01/29/80	SHAW	128	303.1	03/14/75	
	AD	4,198,957	04/22/80	CAGE ET AL.	128	1R	03/22/77	•
	AI	4,199,816	04/22/80	HUMPHREY	364	571	06/28/78	·
	AC	4,206,759	06/10/80	SHAW	128	303.1	03/14/75	
	AE	4,207,896	06/17/80	SHAW	128	303.1	03/14/75	
	АН	4,209,017	06/24/80	SHAW	128	303.1	03/14/75	
	AJ	4,217,910	08/90	KHALIL	128	670		
	AF	4,236,527	12/02/80	NEWBOWER	138	692	10/20/78	
	AG	4,240,441	12/23/80	KHALIL	128	692		
R	AB	4,303,984	12/01/81	HOUVIG	364	571	12/14/79	,
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		SERVICE MANUAL FOR MODEL COM-L	-			AN EDWARDS	LABORATO	RIES,
ρα	AR	JUNE 1984, P. 6 TABLE 2.1.					_	
1		REPEATED OR CONTINUAL MEASUREM	ENTS OF CARI	DIAC OUTPUT IN THE SQUIRRE	L MONKEY (	SAIMIRI SC	IUREUS) B	Υ
	AS	THERMODILUTION, H.H. KAHLIL, B	UREAU OF MEI	D. AND SURGERY, MR011.01.4	, NAVAL AE	ROSPACE ME	D. INST.,	
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		ERENCES CITED BY APPLICANT al Sheets if Necessary)		APPLICANT MICHAEL D. QUINN ET AL.				
-				FILING DATE APRIL 12, 1995		GROUP 3311		
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME CLASS SUB FILING DATE CLASS IF APPROPRIATE				
RY	AD	4,364,390	12/21/82	SHAW	128	303.1	09/05/79	
	AA	4,407,298	10/04/83	LENTZ ET AL.	128	713	07/16/81	
	АН	4,499,907	11/29/83	НАТА	364	571	06/23/81	
	AJ	4,446,715	05/08/84	BAILEY	73	1R	06/07/82	
	AK	4,481,804	11/13/84	EBERHARD ET AL.	73	1G	08/30/82	
	AĐ	4,499,547	02/12/85	INUIYA ET AL.	364	571	08/13/81	
	AG	4,499,907	02/19/85	KALLOK ET AL.	128	419D		
	AF	4,526,175	07/02/85	CHIN ET AL	128	344	02/22/83	
	AC	4,481,804	09/09/86	BUTENKO ET AL.	364	571	07/27/83	
	AE	4,621,643	11/11/86	NEW, JR. ET AL.	128	633	02/05/86	
in	ΑI	4,632,125	12/30/86	WEBLER, ET AL.	128	692	01/13/84	
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re		CRC HANDBOOK OF CHEMISTRY AND	PHYSICS, 60 <sup>1</sup>	<sup>™</sup> ED., 1979-1980, P. 3-85 C	OLE-PARME	R INSTRUME	ENT CO., NI	ILES,
	AR	IL. (CATALOG PAGES 1259-61).		7 1 C 1888 C 1 C				
		CARDIAC OUTPUT ESTIMATION BY A	THERMODILU	TION METHOD INVOLVING INTRA	VASCULAR	HEATING &	THERMISTOR	<b>!</b>
	AS	accounting to 5	Aska Blood	alamina Anadomica Caiscaica		iono To-	10 <b>39</b> /2 <b>3</b> 3	
		RECORDING, T. Barankay et al.,	ACTA PRYSIC	otogica Academiae Scientian	um nungar	icae, iomu	19 30(2-3)	
h	AT	p.167-173, 1970.						
	L	BAXTER HEALTHCARE CORP., (CATA	LOG PAGES 1	, 2, 5, AND 6) JUNE 1992.		-		
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SHEET	4	OF	6

Form PTO 1449 (Modified)		U.S. DEPARTMENT OF PATENT AND TRADEMAR		ATTY. DOCKET NO.4544-011-25 DIV SERIAL NO. 08/420,503			
		ERENCES CITED BY APPLICANT al Sheets if Necessary)		APPLICANT MICHAEL D. QUINN ET AL.			
				FILING DATE APRIL 12, 1995 GROUP 3311			
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME CLASS SUB FILING DATE CLASS IF APPROPRIAT			
res	AB	4,669,066	05/26/87	KAGAWA ET AL.			12/21/85
	AC	4,684,245	08/04/87	GOLDRING	356	41	10/28/85
	AG	4,685,470	08/11/87	SEKII ET AL.	128	692	11/18/85
	AJ	4,696,304	09/29/87	CHIN	128	673	04/23/86
	AA	4,708,777	11/24/87	KURAOKA ET AL.	204	11	02/05/85
	AK	4,718,423	01/12/88	WILLIS ET AL.	128	713	
	AI	4,770,179	09/13/88	NEW, JR. ET AL.	128	633	10/19/87
	AE	4,776,340	10/88	MORON ET AL.	128	634	
	АН	4,785,823	11/22/88	EGGERS ET AL.	128	692	07/21/87
	AD	4,796,640	01/10/89	WEBLER, W.E.			
14	AF	4,814,586	03/89	GRISE	219	549	
			OREIGN PATE	NT DOCUMENTS			
		DOCUMENT NUMBER	DATE	COUNTRY			TRANSLATION YES NO
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		MEASUREMENT OF CARDIAC OUTPUT	BY THERMAL-	DILUTION AND DIRECT FICK ME	THODS IN I	DOGS, H.H.	Khalil et al.
Le	AR	Journal of Appl. Physiol., Vol	. 21(3), p.	1131-5, 1966.			
		"CONTINUOUS THERMAL MEASUREMEN"	T OF CARDIA	C OUTPUT," Philip, Long, Qu	inn, Newb	ower, <u>IEEE</u>	Transactions
	AS	on Biomedical Engineering, Vol	. SME-31, No. 5, May 1984, pp. 393-400.				
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19	\	AD	4,819,655	04/11/89	WEBLER	128	713	08/04/87	
		AE	4,841,981	06/27/89	TANABE ET AL.	128	713		
		AA	4,856,530	08/15/89	VANDERVELDEN	128	692		
		АВ	4,858,615	08/22/89	MEINEMA	128	668	07/29/88	
		AE	4,868,476	09/19/89	RESPAUT	318	632	10/30/87	
		AF	4,869,263	09/26/89	SEGAL ET AL.	128	692	02/04/88	
<del></del>		AG	4,901,734	02/20/90	GRIFFIN ET AL.	128	692	06/30/88	
		АН	4,941,475	07/90	WILLIAMS ET AL.	128	692		
		AI	4,942,877	07/24/90	SAKAI ET AL.	128	633	09/04/87	
		AL	4,954,318	09/04/90	YAFUSO ET AL.	422	59	08/31/87	
r	<u>ب</u>	AK	5,007,423	04/16/91	BRANSTETTER ET AL.	128	633	10/04/89	
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Form PTO 1449 (Modified)	U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO.4544-01	ATTY. DOCKET NO.4544-011-25 DIV		SERIAL NO. 08/420,503		
		ERENCES CITED BY APPLICANT al Sheets if Necessary)		APPLICANT MICHAEL D. QUINN ET AL	•			
				FILING DATE APRIL 12, 1995		GROUP 3311		
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME CLASS SUB			FILING DATE	
И	AI	5,009,234	04/91	ALT	128	692	12/88	
	АН	5,046,505	09/10/91	SEKII ET AL.			09/05/89	
	AA	5,047,025	09/10/91	TAYLOR ET AL.	606	31	01/12/90	
	AB	5,056,526	10/15/91	KHALIL	128	713	10/89	
	AC	5,080,106	01/14/92	SEKII ET AL.	128	692	01/09/90	
	AG	5,121,749	06/16/92	NASSI ET AL.	128	692	09/12/90	
	AF	5,135,535	08/04/92	KRAMER	606	194	06/11/91	
	AK	5,158,082	10/92	JONES	128	633	08/90	
	AD	5,214,267	05/93	HOSHI ET AL.	219	497	12/90	
ri	AJ	5,435,308	07/95	GALLUP ET AL.	128	713	07/92	
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	INTERNATIONAL SEARCH REPORT	International applic	cation No.
. •		PCT/US92/01012	2
' IPC(5)	SSIFICATION OF SUBJECT MATTER :A61B 5/02		-
US CL According	1128/029  To International Patent Classification (IPC) or to both national class	sification and IPC	
B. FIE	LDS SEARCHED  A  locumentation searched (classification system followed by classification system followed by	ation symbols)	
	128/691,693,700,713,736	· ·	
Documenta	tion searched other than minimum documentation to the extent that s	uch documents are included	in the fields searched
Electronic	data base consulted during the international search (name of data b	pase and, where practicable,	search terms used)
C. DO	CUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, o	f the relevant passages	Relevant to claim No.
Υ '	US, A, 3,075,515 (RICHARDS) 29 January 1963, See col. 3,	lines 1-15.	2-7,26-31, 37,39
Υ •	US, A, 4,499,907 (KALLOK ET AL.) 19 February 1985, Sec	element 280.	21-24,33-35, 41,42,44
٠ الم	US, A, 4,073,287 (BRADLEY ET AL.) 14 February 1978, Se	ce figure 6.	10
Υ •	US, A. 4,856,530 (VANDERVELDEN) 15 August 1989, See	entire document.	21-24,33-35, 41,42,44
X Y	US, A, 4,240,441 (KHALIL) 23 December 1980, See entire o	locument.	1,8,9,13, 16,17,21, 32,38,43
			2-7,10-12, 14,15,21-24 26-31,32-35, 38-39,43,44
Υ.	US. A, 5,056,526 (KHALIL) 15 October 1991, See element	12.	14,15
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X F	orther documents are listed in the continuation of Box C.	See patent family annex.	
.v.	Special categories of cited documents:  'T'  document defining the general state of the art which is not considered	later document published after the i date and not in conflict with the app principle or theory underlying the i	invention
.Е <u>.</u>	to be part of particular relevance cartier document published on or after the international filing date 'X'	document of particular relevance; considered novel or cannot be cons when the document is taken alone	the claimed invention cannot be idered to involve an inventive step
	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  document referring to an oral disclosure, use, exhibition or other	document of particular relevance; considered to involve an invent combined with one or more other	such documents, such combination
· p-	document published prior to the international filing date but later than	being obvious to a person skilled i	n the art
	the priority date claimed		

Date of the actual completion of the international search

27 AUGUST 1992

Name and mailing address of the ISA/ Commissione and Tree day Box PCT Weshington

Date of mailing of the international search report

. .... 408.3751

Authorized officer

	INTERNATION. SEARCH REPORT	national app PCT/US92/010	
C (Cont	inuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Categor	the state of the	relevant passages	Relevant to claim No.
Category Y	US, A, 4,841,981 (TANABE ET AL) 27 June 1989. See entire doc		2-7,26-31. 37,39
X Y	US, A, 4,901,734 (GRIFFIN ET AL.) 20 February 1990, See enti	re document.	1,18,19,20, 25,36,40 37,41,42
A	US, A, 3,798,967 (GIELES ET AL.) 26 March 1974, See entire of	document.	1,18-20,25, 36,37,40-42
MA	US, A, 4,632,125 (WEBLER ET AL.) 30 December 1986, See e	ntire document.	1,18-20,25, 36,37,40-42
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## IN UNATIONAL SEARCH REPORT

PCT/US 92/02414

a. FIELDS SI	C + DCMED		<u></u>
U. FIELUS SI	LAKCHED	Minimum Documentation Searched	
Classification	Systems	Classification Symbols	
Int.C1.	5	A61B	
-		Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>	
		RED TO BE RELEVANT <sup>9</sup> Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No.
Category °		youred and mental the transfer of the transfer	
X X	Februa see co	303 757 (B. BRAUN MELSUNGEN A.G.) 22 ry 1989 lumn 3, line 56 - column 4, line 42 gures 1,4-10	1-4,7,8, 10,11,13 17,18 22-25, 27,28, 30,31
X X X	cited see co	796 640 (W.E. WEBLER) 10 January 1989 in the application lumn 1, line 42 - column 2, line 28 lumn 3, line 1 - column 4, line 35	1-4,7-13 17-28 30,31
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- earlier document but published on or after the international filing date
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Date of Mailing of this International Search Report

"A" document member of the same patent family

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IV. CERTIFICATION

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Date of the Actual Completion of the International Search

15 JULY 1992

**EUROPEAN PATENT OFFICE** 

Signature of Authorized Officer

RIEB K.D.

Form PCT/ISA/210 (second short) (January 1965)

International Searching Authority

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International Application No

III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET) Category ° Citation of Document, with indication, where appropriate, of the relevant passages Relevant to Claim No. US,A,3 595 079 (A.R. GRAHN) 27 July 1971 1-4, 10-13 see column 3, line 63 - column 5, line 21 see figure 2 19,23-25 30,31 US,A,4 718 423 (A.F. WILLIS ET AL.) 12 January 1-4,10, 11,13 22-25 27-31 see column 4, line 9 - line 36 see column 6, line 8 - line 65

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